

ABSTRACT OF THE DISCLOSURE

A process for generating a high-hydrogen, low-carbon monoxide gas comprises generating a product gas in a gas generating device. The product gas contains hydrogen and carbon monoxide that are generated from catalytic water vapor reforming of a water/fuel mixture and/or from partial oxidation of an oxygen/fuel mixture. In a gas purification stage, the carbon monoxide fraction in the product gas is reduced by selective CO oxidation on an oxidation catalyst. During a starting phase, oxygen is admixed to the supplied fuel and the flow direction is reversed such that the flow first takes place through the gas purification stage and only then through the gas generating device.